

31

**Notice of Allowability**

Application No.

10/796,603

Examiner

Michael A. Lyons

Applicant(s)

SALNIK ET AL.

Art Unit

2877

**-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address--**

All claims being allowable, PROSECUTION ON THE MERITS IS (OR REMAINS) CLOSED in this application. If not included herewith (or previously mailed), a Notice of Allowance (PTOL-85) or other appropriate communication will be mailed in due course. **THIS NOTICE OF ALLOWABILITY IS NOT A GRANT OF PATENT RIGHTS.** This application is subject to withdrawal from issue at the initiative of the Office or upon petition by the applicant. See 37 CFR 1.313 and MPEP 1308.

1. ☒ This communication is responsive to amendment filed 22 January 2007.
2. ☒ The allowed claim(s) is/are 1,3-6,8,10-12,14,15,18-20,22 and 23.
3. ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some\* c) ☐ None of the:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
3. ☐ Copies of the certified copies of the priority documents have been received in this national stage application from the International Bureau (PCT Rule 17.2(a)).

\* Certified copies not received: \_\_\_\_\_.

Applicant has THREE MONTHS FROM THE "MAILING DATE" of this communication to file a reply complying with the requirements noted below. Failure to timely comply will result in ABANDONMENT of this application.  
**THIS THREE-MONTH PERIOD IS NOT EXTENDABLE.**

4. ☐ A SUBSTITUTE OATH OR DECLARATION must be submitted. Note the attached EXAMINER'S AMENDMENT or NOTICE OF INFORMAL PATENT APPLICATION (PTO-152) which gives reason(s) why the oath or declaration is deficient.
5. ☐ CORRECTED DRAWINGS (as "replacement sheets") must be submitted.
- (a) ☐ including changes required by the Notice of Draftsperson's Patent Drawing Review (PTO-948) attached
- 1) ☐ hereto or 2) ☐ to Paper No./Mail Date \_\_\_\_\_.
- (b) ☐ including changes required by the attached Examiner's Amendment / Comment or in the Office action of Paper No./Mail Date \_\_\_\_\_.
- Identifying indicia such as the application number (see 37 CFR 1.84(c)) should be written on the drawings in the front (not the back) of each sheet. Replacement sheet(s) should be labeled as such in the header according to 37 CFR 1.121(d).
6. ☐ DEPOSIT OF and/or INFORMATION about the deposit of BIOLOGICAL MATERIAL must be submitted. Note the attached Examiner's comment regarding REQUIREMENT FOR THE DEPOSIT OF BIOLOGICAL MATERIAL.

**Attachment(s)**

1. ☐ Notice of References Cited (PTO-892)
2. ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3. ☐ Information Disclosure Statements (PTO/SB/08),  
Paper No./Mail Date \_\_\_\_\_
4. ☐ Examiner's Comment Regarding Requirement for Deposit of Biological Material
5. ☐ Notice of Informal Patent Application
6. ☐ Interview Summary (PTO-413),  
Paper No./Mail Date \_\_\_\_\_
7. ☐ Examiner's Amendment/Comment
8. ☒ Examiner's Statement of Reasons for Allowance
9. ☐ Other \_\_\_\_\_

## **DETAILED ACTION**

### ***Allowable Subject Matter***

**Claims 1, 3-6, 8, 10-12, 14-15, 18-20, and 22-23 are allowed in view of the prior art.**

The following is an examiner's statement of reasons for allowance:

As to claims 1, 8, and 20, the prior art of record, taken either alone or in combination, fails to disclose or render obvious a method of evaluating the abruptness of a junction in a semiconductor sample (claims 1 and 8) and a method of evaluating two or more properties of a junction formed in a semiconductor sample (claim 20), the method comprising, among other essential method steps, the derivation of a slope of a line in the in-phase and quadrature plane fitted to the in-phase and quadrature values that compose taken measurements, and using the derived slope in combination with a previously derived slope associated with a calibration sample having known junction abruptness, in combination with the rest of the limitations of the above claims.

As to claims 5 and 12, the prior art of record, taken either alone or in combination, fails to disclose or render obvious a method of evaluating the abruptness of a junction in a semiconductor sample, the method comprising, among other essential method steps, the further processing including the analysis of the slope or shape of a line fit to the in-phase and quadrature components derived from measurement points as plotted in in-phase and quadrature space, in combination with the rest of the limitations of the above claims.

As to claim 18, the prior art of record, taken either alone or in combination, fails to disclose or render obvious a method of characterizing a semiconductor sample, where the method comprises obtaining two or more measurements via the analysis of a reflected probe

Art Unit: 2877

beam off a sample surface, with one measurement following previous measurements after a predetermined time, followed by the fitting the measurements to a curve using a function with two or more variables, and characterizing the incompleteness of an annealing process and/or the presence of surface states by the evaluation of the curve, in combination with the rest of the limitations of the above claims, and in the best understanding of the examiner.

As to claim 22, the prior art of record, taken either alone or in combination, fails to disclose or render obvious a method of evaluating the incompleteness of an annealing process and/or the presence of surface states of a semiconductor sample, the method comprising, among other essential method steps, obtaining a first and second measurement of the modulated changes in the reflected intensity of the probe beam induced by periodic excitation, calculating a delay factor based on the first and second measurements, and using the decay factor to evaluate the incompleteness of an annealing process and/or the presence of surface states of a semiconductor sample, in combination with the rest of the limitations of the above claim.

Any comments considered necessary by applicant must be submitted no later than the payment of the issue fee and, to avoid processing delays, should preferably accompany the issue fee. Such submissions should be clearly labeled "Comments on Statement of Reasons for Allowance."

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Michael A. Lyons whose telephone number is 571-272-2420. The examiner can normally be reached on Monday through Friday.

Art Unit: 2877

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Gregory J. Toatley can be reached on 571-272-2800 ext. 77. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

MAL  
February 6, 2007

A handwritten signature in black ink, appearing to read 'Layla G. Lauchman', with a stylized, flowing script.

**LAYLA G. LAUCHMAN**  
**PRIMARY EXAMINER**